

Harappan Culture: Bronze Age Urbanization in the Indus Valley

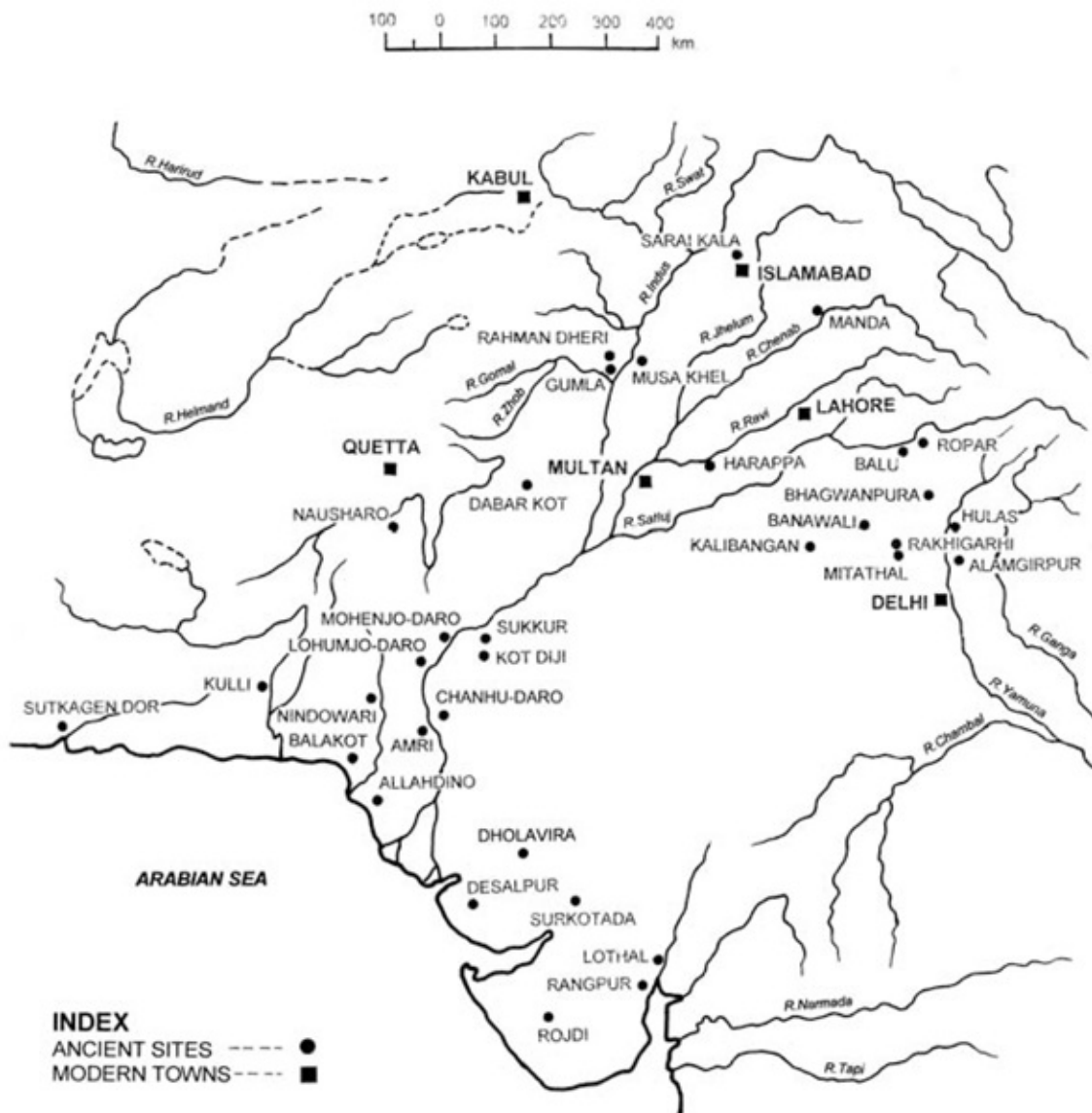
Introduction

The urban culture of the Bronze Age found in Harappa in Pakistani Punjab was a path-breaking discovery. In 1853, A. Cunningham, the British engineer who became a great excavator and explorer, noticed a Harappan seal. Though the seal showed a bull and six written letters, he did not realize its significance. Much later, in 1921, the potentiality of the site of Harappa was appreciated when an Indian archeologist, Daya Ram Sahni, started excavating it. At about the same time, R.D. Banerjee, a historian, excavated the site of Mohenjo-daro in Sindh. Both discovered pottery and other antiquities indicative of a developed civilization. Large-scale excavations were carried out at Mohenjo-daro under the general supervision of Marshall in 1931. Mackay excavated the same site in 1938. Vats excavated at Harappa in 1940. In 1946 Mortimer Wheeler excavated Harappa, and the excavation of the pre-Independence and pre-Partition period brought to light important antiquities of the Harappan culture at various sites where bronze was used.

In the post-Independence period, archaeologists from both India and Pakistan excavated the Harappan and connected sites. Suraj Bhan, M.K. Dhavalikar, J.P. Joshi, B.B. Lal, S.R. Rao, B.K. Thapar, R.S. Bisht, and others worked in Gujarat, Harayana, and Rajasthan.

In Pakistan, Kot Diji in the central Indus Valley was excavated by F.A. Khan, and great attention was paid to the Hakra and pre-Hakra cultures by M.R. Mughal. A.H. Dani excavated the Gandhara graves in the North-West Frontier Province of Pakistan. American, British, French, and Italian archaeologists also worked at several sites including Harappa.

SPREAD OF INDUS CIVILIZATION



MAP 3 Spread of Indus Civilization. Courtesy ASI

Now we have a wealth of Harappan material, though excavations and explorations are still in progress. All scholars agree on the urban character of the Harappan culture, but opinions differ on the role of the Sarasvati identified with the Hakra–Ghaggar river and also on the identity of the people who created this culture. The problem will be considered later in this chapter.

The Indus or the Harappan culture is older than the Chalcolithic cultures that have been examined earlier, but as a bronze-using culture it is far more developed than the latter. It developed in the north-western part of the Indian subcontinent. It is called Harappan because this civilization was discovered first in 1921 at the modern site of Harappa situated in the province of Punjab in Pakistan. Many sites in Sindh formed the central zone of pre-Harappan culture. This culture developed and matured into an urban civilization that developed in Sindh and Punjab. The central zone of this mature Harappan culture lay in Sindh and Punjab, principally in the Indus Valley. From there it spread southwards and eastwards. In this way, the Harappan culture covered parts of Punjab, Haryana, Sindh, Baluchistan, Gujarat, Rajasthan, and the fringes of western UP. It extended from the Siwaliks in the north to the Arabian Sea in the south, and from the Makran coast of Baluchistan in the west to Meerut in the north-east. The area formed a triangle and accounted for about 1,299,600 sq. km which is a larger area than that of Pakistan, and certainly larger than ancient Egypt and Mesopotamia. No other culture zone in the third and second millennia BC in the world was as widespread as the Harappan.

Nearly 2800 Harappan sites have so far been identified in the subcontinent. They relate to the early, mature, and late phases of Harappan culture. Of the mature phase sites, two most important cities were Harappa in Punjab and Mohenjo-daro (literally, the mound of the dead) in Sindh, both forming parts of Pakistan. Situated at a distance of 483 km, they were linked by the Indus. A third city lay at Chanhudaro about 130 km south of Mohenjo-daro in Sindh, and a fourth at Lothal in Gujarat at the head of the Gulf of Cambay. A fifth city lay at Kalibangan, which means black bangles, in northern Rajasthan. A sixth, called Banawali, is situated in Hissar district in Haryana. It saw two cultural phases, pre-Harappan and Harappan, similar to that of Kalibangan. To the Harappan period relate the remains of mud-brick platforms, and of streets and drains. The Harappan culture is traceable in its mature and flourishing stage to all these six

places, as also to the coastal cities of Sutkagendor and Surkotada, each of which is marked by a citadel. The later Harappan phase is traceable to Rangpur and Rojdi in the Kathiawar peninsula in Gujarat. In addition, Dholavira, lying in the Kutch area of Gujarat, has Harappan fortification and all the three phases of the Harappan culture. These phases are also manifested in Rakhigarhi which is situated on the Ghaggar in Haryana and is much larger than Dholavira.

In comparative terms, Dholavira covers 50 ha but Harappa 150 ha and Rakhigarhi 250 ha. However, the largest site is Mohenjo-daro, which covers 500 ha. In ancient time times, a large part of this city was completely destroyed by massive floods.

Town Planning and Structures

The Harappan culture was distinguished by its system of town planning. Both Harappa and Mohenjo-daro had a citadel or acropolis, and this was possibly occupied by members of the ruling class. Below the citadel in each city lay a lower town with brick houses, that were inhabited by the common people. The remarkable thing about the arrangement of the houses in the cities is that they followed a grid system, with roads cutting across one another virtually at right angles. Mohenjo-daro scored over Harappa in terms of structures. The monuments of the cities symbolized the ability of the ruling class to mobilize labour and collect taxes; the huge brick constructions were a means of impressing upon the common people the prestige and influence of their rulers.

The most important public place of Mohenjo-daro seems to have been the great bath, comprising the tank which is situated in the citadel mound, and is a fine example of beautiful brickwork. It measures 11.88×7.01 m and 2.43 m deep. Flights of steps at either end lead to the surface, and there are side rooms for changing clothes. The floor of the bath was made of burnt bricks. Water was drawn from a large well in an adjacent room, and an outlet from the corner of the bath led to a drain. It has been suggested that the great bath was primarily intended for ritual bathing, which has been so vital to any religious ceremony in India. The large tank found in Dholavira may be compared to the great bath. The Dholavira tank was probably used for the same purpose as the great bath of Mohenjo-daro.

In Mohenjo-daro, the largest building is a granary, 45.71 m long and 15.23 m wide. In the citadel of Harappa, however, we find as many as six granaries. A series of brick platforms formed the basis for two rows of six granaries. Each

granary measured 15.23×6.09 m and lay within a few metres of the river bank. The combined floor space of the twelve units would be about 838 sq. m. It was approximately of the same area as the great granary at Mohenjo-daro. To the south of the granaries at Harappa lay working floors consisting of the rows of circular brick platforms. These were evidently meant for threshing grain, because wheat and barley were found in the crevices of the floors. Harappa also had two-roomed barracks which possibly accommodated labourers.

In the southern part of Kalibangan too, there are brick platforms, which may have been used for granaries. Thus, it would appear that granaries played an important role in Harappan cities.

The use of burnt bricks in the Harappan cities is remarkable because in the contemporary buildings of Egypt dried bricks were primarily used. We find the use of baked bricks in contemporary Mesopotamia, but they were used to a much larger extent in the Harappan cities.

The drainage system of Mohenjo-daro was very impressive. In almost all the cities, every house, large or small, had its own courtyard and bathroom. In Kalibangan many houses had their own wells. Water flowed from the house to the streets which had drains. Sometimes these drains were covered with bricks and sometimes with stone slabs. The remains of streets and drains have also been found at Banawali. Altogether, the quality of the domestic bathrooms and drains is remarkable, and the drainage system of Harappa is almost unique. Perhaps no other Bronze Age civilization paid so much attention to health and cleanliness as did the Harappan.

Agriculture

Comparatively rainless, the Indus region is not so fertile today, but the prosperous villages and towns of the past testify that it was fertile in ancient times. Today the rainfall is about 15 cm, but in the fourth century BC, one of the historians of Alexander informs us, that Sindh was a fertile part of India. In earlier times, the Indus region had more natural vegetation which contributed to rainfall. It supplied timber for baking bricks and also for construction. In course of time, the natural vegetation was destroyed by the extension of agriculture, large-scale grazing, and supply of fuel. A far more important reason for the fertility of the area seems to have been the annual inundation of the Indus, which is the longest Himalayan river. Walls made of burnt bricks raised for protection indicate that floods were an annual event. Just as the Nile created Egypt and

supported its people, so too the Indus created Sindh and fed its people. The Indus people sowed seeds in the flood plains in November, and reaped their harvests of wheat and barley in April, before the next flood. No hoe or ploughshare has been discovered, but the furrows discovered in the pre-Harappan phase at Kalibangan indicate that the fields were ploughed in Rajasthan during the Harappan period. The Harappans probably used the wooden plough drawn by oxen, and camels may also have been used for this purpose. Stone sickles may have been used for harvesting the crops. *Gabarbands* or *nalas* enclosed by dams for storing water were a feature in parts of Baluchistan and Afghanistan, but channel or canal irrigation was probably not practised. Harappan villages, mostly situated near the flood plains, produced sufficient food grains not only for their inhabitants but also the towns people. They must have worked very hard to meet their own requirements as well as those of the artisans, merchants, and others who lived in the city and were not directly concerned with food-production activities.

The Indus people produced wheat, barley, *rai*, peas, and the like. Two types of wheat and barley were grown. A substantial quantity of barley was discovered at Banawali. In addition, sesamum and mustard were grown. However, the position seems to have been different with the Harappans at Lothal. It seems that as early as 1800 BC, the people of Lothal grew rice, the remains of which have been found. Food grains were stored in huge granaries in both Mohenjo-daro and Harappa, and possibly in Kalibangan. In all probability, cereals were received as taxes from peasants and stored in granaries for the payment of wages as well as for use during emergencies. This can be surmised from the analogy of Mesopotamian cities where wages were paid in barley. The Indus people were the earliest people to produce cotton, and because of this, the Greeks called the area Sindon which is derived from Sindh.

Domestication of Animals

Although the Harappans practised agriculture, animals were raised on a large scale. Oxen, buffaloes, goats, sheep, and pigs were domesticated. Humped bulls were favoured by the Harappans. There is evidence of dogs and cats from the outset, and asses and camels were bred and were obviously used as beasts of burden, and the latter may also have been used for ploughing. Evidence of the horse comes from a superficial level of Mohenjodaro and from a doubtful terracotta figurine from Lothal. The remains of a horse are reported from Surkotada, situated in west Gujarat, and relate to around 2000 BC but the identity is doubtful. In any case, the Harappan culture was not horse-centred. Neither the

bones of a horse nor its representations have been traced in early and mature Harappan cultures. Elephants were well known to the Harappans, who were also acquainted with the rhinoceros. The contemporary Sumerian cities in Mesopotamia produced virtually the same food grains and domesticated the same animals as did the Harappans, but the Harappans in Gujarat produced rice and domesticated elephants which was not the case with the Mesopotamians.

Technology and Crafts

The rise of towns in the Indus zone was based on agricultural surplus, the making of bronze tools, various other crafts, and widespread trade and commerce. This is known as the first urbanization in India, and the Harappan urban culture belongs to the Bronze Age. The people of Harappa used many tools and implements of stone, but they were very well acquainted with the manufacture and use of bronze. Ordinarily bronze was made by smiths by mixing tin with copper, but they occasionally also mixed arsenic with copper for this purpose. As neither tin nor copper was easily available to the Harappans, bronze tools do not abound in the region. The impurities of the ores show that copper was obtained from the Khetri copper mines of Rajasthan, although it could also be brought from Baluchistan. Tin was possibly brought with difficulty from Afghanistan, although its old workings are stated to have been found in Hazaribagh and Bastar. The bronze tools and weapons recovered from the Harappan sites contain a smaller percentage of tin. However, the kits used for the manufacture of bronze goods left by the Harappans are so numerous as to suggest that the bronze smiths constituted an important group of artisans in Harappan society. They produced not only images and utensils but also various tools and weapons such as axes, saws, knives, and spears.

Several other important crafts flourished in Harappan towns. A piece of woven cotton has been recovered from Mohenjo-daro, and textile impressions have been found on several objects. Spindle whorls were used for spinning. Weavers wove cloth of wool and cotton. Huge brick structures suggest that bricklaying was an important craft, and attest to the existence of a class of masons. The Harappans also practised boat-making. As will be shown later, seal-making and terracotta manufacturing were also important crafts. The goldsmiths made jewellery of silver, gold, and precious stones; the first two materials may have been obtained from Afghanistan and the last from south India. The Harappans were also expert bead makers. The potter's wheel was extensively used, and the Harappans produced their characteristic glossy, gleaming pottery.

Trade and Commerce

The importance of trade in the life of the Indus people is supported not only by granaries found at Harappa, Mohenjo-daro, and Lothal but also by finds of numerous seals, a uniform script, and regulated weights and measures covering a wide area. The Harappans conducted considerable trade in stone, metal, shell, etc., within the Indus culture zone. However, their cities did not have the necessary raw material for the commodities they produced. They did not use metal money, and in all probability carried exchanges through a barter system. In return for finished goods and possibly food grains, they procured metals from the neighbouring areas by boat (they navigated the coast of the Arabian Sea) and bullock-cart. They were aware of the use of the wheel, and carts with solid wheels were in use in Harappa. It appears that the Harappans used a form of the modern *ekka* but not with the spoked wheel.

The Harappans had commercial links with Rajasthan, and also with Afghanistan and Iran. They set up a trading colony in northern Afghanistan which evidently facilitated trade with Central Asia. Their cities also had commercial links with the people of the Tigris and the Euphrates basins. Many Harappan seals have been discovered in Mesopotamia, and it appears that the Harappans imitated some cosmetics used by the urban people of Mesopotamia.

The Harappans carried on long-distance trade in lapis lazuli; lapis objects may have contributed to the social prestige of the ruling class. The Mesopotamian records from about 2350 BC onwards refer to trade relations with Meluha, which was the ancient name given to the Indus region. The Mesopotamian texts speak of two intermediate trading stations called Dilmun and Makan, which lay between Mesopotamia and Meluha. Dilmun is probably identifiable with Bahrain on the Persian Gulf. Thousands of graves await excavation in that port city.

Social Organization

Excavations indicate a hierarchy in urban habitation. Although only two localities are attributed to the city of Harappa, its structure evidences three distinct localities, and the latter is true also of Kalibangan and Dholavira. The citadel or the first locality was where the ruling class lived and the lowest tower was where the common people dwelt. The middle settlement may have been meant for bureaucrats and middle-class merchants. However, whether hierarchy

in settlements corresponded to occupational divisions or socio-economic differentiation is not clear. There is no doubt that the same city was inhabited by different housing groups which were not of the same size. Social differentiation is indicated by different residential structures, with the number of rooms varying from one to twelve. The city of Harappa had two-roomed houses, probably meant for artisans and labourers.

Polity

As the Harappan culture is more or less uniform over a large area, a central authority may have contributed to this. We may identify some important elements of the state in the Indus Valley. The *Arthashastra* of Kautilya considers sovereignty, ministers, populated territory, forts, treasury, force, and friends to be the organs of the state. In the Harappan culture, the citadel may have been the seat of sovereign power, the middle town may have been the area where the bureaucrats lived or the seat of government, and the great granary at Mohenjodaro may have been the treasury. It appears that taxes were collected in grain. Also, the entire Harappan area was a well-populated territory. Fortification was a feature of several cities. Dholavira, in particular, had forts within forts. We have no clear idea of an organized force or standing army, but a heap of sling stones and the depiction of a soldier on a potsherd at Surkotada may suggest a standing army. In any case, the state was well established in the mature Harappan phase.

In sharp contrast to Egypt and Mesopotamia, no temples have been found at any Harappan site. No religious structures of any kind have been excavated apart from the great bath, which may have been used for ablution. It would, therefore, be wrong to think that priests ruled in Harappa as they did in the cities of lower Mesopotamia. The Harappan rulers were more concerned with commerce than with conquest, and Harappa was possibly ruled by a class of merchants. However, the Harappans did not have many weapons which might mean the lack of an effective warrior class.

Religious Practices

In Harappa numerous terracotta figurines of women have been found. In one figurine, a plant is shown growing out of the embryo of a woman. The image probably represents the goddess of earth, and was intimately connected with the origin and growth of plants. The Harappans, therefore, looked upon the earth as

a fertility goddess and worshipped her in the same way as the Egyptians worshipped the Nile goddess Isis. We do not, however, know whether the Harappans were a matriarchal people like the Egyptians. In Egypt, the daughter inherited the throne or property, but we do not know about the nature of inheritance in Harappan society.

Some Vedic texts indicate a reverence for the earth goddess, although she is not given any prominence. It took a long time for the worship of the supreme goddess to develop on a large scale in Hinduism. Only from the sixth century AD onwards are various mother goddesses such as Durga, Amba, Kali, and Chandi are regarded as such in the Puranas and in tantra literature. In the course of time, every village came to have its own separate goddess.

The Male Deity in the Indus Valley

The male deity is represented on a seal. This god has three-horned heads, and is represented in the sitting posture of a yogi, with one leg placed above the other. This god is surrounded by an elephant, a tiger, a rhinoceros, and below his throne there is a buffalo, and at his feet two deer. The god so depicted is identified as Pashupati Mahadeva, but the identification is doubtful because the bull is not represented here and horned gods also figure in other ancient civilizations. We also encounter the prevalence of the phallus worship, which in later times became so intimately connected with Shiva. Numerous symbols of the phallus and female sex organs made of stone have been found in Harappa, and were possibly meant for worship. The *Rig Veda* speaks of non-Aryan people who were phallus worshippers. Phallus worship thus begun in the days of Harappa was later recognized as a respectable form of worship in Hindu society.

Tree and Animal Worship

The people of the Indus region also worshipped trees. The depiction of a deity is represented on a seal amidst branches of the pipal. This tree continues to be worshipped to this day. Animals were also worshipped in Harappan times, and many of them are represented on seals. The most important of them is the one-horned animal unicorn which may be identified with the rhinoceros. Next in importance is the humped bull. Even today, when such a bull passes through the market streets, pious Hindus give way to it. Similarly, the animals surrounding 'Pashupati Mahadeva' indicate that these were worshipped. Evidently, therefore,

the inhabitants of the Indus region worshipped gods in the form of trees, animals, and human beings, but the gods were not placed in temples, a practice that was common in ancient Egypt and Mesopotamia. Nor can we say anything about the religious beliefs of the Harappans without being able to read their script. Amulets have been found in large numbers. In all probability, the Harappans believed that ghosts and evil forces were capable of harming them and, therefore, they used amulets against them. The *Atharva Veda*, which is associated with the non-Aryan tradition, contains many charms and spells, and recommends amulets to ward off diseases and evil forces.

The Harappan Script

The Harappans invented the art of writing like the people of ancient Mesopotamia. Although the earliest specimen of the Harappan script was discovered in 1853 and the complete script by 1923, it has yet to be deciphered. Some scholars try to connect it with the Dravidian or the proto-Dravidian language, others with Sanskrit, and yet others with the Sumerian language, but none of these readings is satisfactory. As the script has not been deciphered, we can neither judge the Harappan contribution to literature, nor say anything about their ideas and beliefs.

There are nearly 4000 specimens of Harappan writing on stone seals and other objects. Unlike the Egyptians and Mesopotamians, the Harappans did not write long inscriptions. Most inscriptions were recorded on seals and contain only a few words. These seals may have been used by the proprietors to mark and identify their private property. Altogether we have about 250 to 400 pictographs, and in the form of a picture each letter stands for some sound, idea, or object. The Harappan script is not alphabetical but largely pictographic. Attempts have been made to compare it with the contemporary scripts of Mesopotamia and Egypt, but it is the indigenous product of the Indus region and does not indicate any connection with the scripts of western Asia.

Weights and Measures

The knowledge of a script must have helped in recording private property and the maintenance of accounts. The urban people of the Indus region also needed and used weights and measures for trade and other transactions. Numerous articles used as weights have been found. They show that in weighing, largely 16

or its multiples were used: for instance, 16, 64, 160, 320, and 640. Interestingly, the tradition of 16 has continued in India up to modern times and till recently, 16 annas constituted one rupee. The Harappans also knew the art of measurement. Sticks inscribed with measure marks have been found, and one of these is made of bronze.

Harappan Pottery

The Harappans had great expertise in the use of the potter's wheel. Discovered specimens are all red and include dish-on-stand. Numerous pots have been found painted with a variety of designs. Harappan pots were generally decorated with the designs of trees and circles, and images of men also figure on some pottery fragments.

Seals and Sealings

The greatest artistic creations of the Harappan culture are seals. About 2000 seals have been found, and of these a great majority carry short inscriptions with pictures of one horned animals called unicorns, buffaloes, tigers, rhinoceroses, goats, elephants, antelopes, and crocodiles. Seals were made of steatite or faience and served as symbols of authority. They were hence used for stamping. However, there are few stamped objects, called sealings, in contrast to Egypt and Mesopotamia. Seals were also used as amulets.

Images

The Harappan artisans made beautiful images of metal. A woman dancer made of bronze is the best specimen, and she, apart from wearing a necklace, is naked. A few pieces of Harappan stone sculpture have been found. One steatite statue wears an ornamented robe passing over the left shoulder under the right arm like a shawl, and the short locks at the back of the head are held in place by a woven fillet.

Terracotta Figurines

There are many figurines made of fire-baked earthen clay, commonly called terracotta. These were either used as toys or objects of worship. They represent birds, dogs, sheep, cattle, and monkeys. Men and women also find a place in the terracotta objects, and the second outnumber the first. The seals and images were manufactured with great skill, but the terracotta pieces represent unsophisticated artistic works. The contrast between the two sets indicates the gap between the classes that utilized them, the first being used by members of the upper classes and the second by the common people.

Stone Work

We do not find much stone work in Harappa and Mohenjo-daro because stone could not be procured by the two great cities. The position was, however, different in Dholavira located in Kutch. The citadel of Dholavira built of stone is a monumental work and the most impressive among the Harappan citadels discovered so far. In Dholavira, dressed stone is used in masonry with mud bricks, which is remarkable. Stone slabs are used in three types of burials in Dholavira, and in one of these, above the grave there is a circle of stones resembling a Megalithic stone circle.

End of the Indus Culture

The mature Harappan culture, broadly speaking, existed between 2500 and 1900 BC. Throughout the period of its existence, it seems to have retained the same kind of tools, weapons, and houses. The entire lifestyle appears to have been uniform: the same town planning, the same seals, the same terracotta works, and the same long chert blades. However, the view stressing changelessness cannot be pushed too far. We do notice changes in the pottery of Mohenjo-daro over a period of time. By the nineteenth century BC, the two important cities of Harappan culture, Harappa and Mohenjo-daro, disappeared, but the Harappan culture at other sites faded out gradually and continued in its degenerate form in the outlying fringes of Gujarat, Rajasthan, Haryana, and western UP until 1500 BC.

It is difficult to account for this cultural collapse. The environmental factor may have been important. In the Harappan zone, both the Yamuna and Sutlej moved away from the Sarasvati or the Hakra around 1700 BC. This meant loss in water supply. Similarly, rainfall decreased at about that time. Some speak of dam

formation in the Indus leading to a massive flooding of Mohenjo-daro. These factors may have worked adversely, but failure in human activities cannot be discounted.

It appears that crafts and commerce collapsed because of the sudden end of the long-distance land and sea trade with Mesopotamia. This trade in luxurious articles, including lapis lazuli, beads, etc., mainly passed through Elam, which was located on the eastern border of Mesopotamia and covered a substantial part of Iran. The emergence of Elam as a powerful state around 2000 BC interrupted the supply of Harappan goods to Mesopotamia and the Mesopotamian imports, including tin, to the Harappan settlements.

Beads of hard materials, especially stone, were made in the Harappan zone and sent outside. The break in their exports to Mesopotamia deprived the craftsmen of their livelihood. Similarly, the break in the supply of tin to the Valley dealt a great blow to the artisans employed in making bronze.

The exhaustion of the soil may have diminished cereal production and starved the urban people. Once the aristocracy living in the cities failed to exercise its control over crafts and cultivation, Harappan culture collapsed.

Maturity

Nearly 2800 Harappan sites have been identified. Of these, early and post-urban Harappan sites account for over half the total number. Mature Harappan settlements number 1022. Of them, 406 are located in Pakistan and 616 in India. Though mature Harappan sites are outnumbered by early and post-Harappan sites, because of their urban nature, the total area of the mature Harappan sites is larger than that of the early and post-urban sites.

The Harappan cities are indicative of well-planned growth, but their Mesopotamian counterparts show haphazard growth. Rectangular houses with brick-lined bathrooms and wells together with their stairways are found in all Harappan cities, but such town planning is not evident in the cities of western Asia. No other people in antiquity had built such an excellent drainage system except perhaps those of Crete in Knossos, nor did the people of western Asia show such skill in the use of burnt bricks as did the Harappans. The Harappans produced their own characteristic pottery and seals, and, above all, they invented their own script, which neither resembled the Egyptian nor the Mesopotamian. No contemporary culture spread over such a wide area as did the Harappan.

Post-Urban Phase

The Harappan culture seems to have flourished until 1900 BC. Subsequently, its urban phase marked by systematic town planning, extensive brickwork, the art of writing, standard weights and measures, distinction between the citadel and the lower town, use of bronze tools, and red-ware pottery painted with black designs, virtually disappeared as did its stylistic homogeneity. Some traits of post-urban Harappan culture are to be found in Pakistan, and in central and western India, in Punjab, Rajasthan, Haryana, Jammu & Kashmir, Delhi, and western UP. They broadly cover the period from 1900 to 1200 BC. The post-urban phase of Harappan culture is also known as the sub-Indus culture and was earlier considered post-Harappan, but now is better known as post-urban Harappan culture.

Post-urban Harappan cultures were primarily Chalcolithic in which tools of stone and copper were used. They did not have metal objects requiring complicated casting, although they had axes, chisels, knives, bangles, curved razors, fish-hooks, and spearheads. The Chalcolithic people in the later, post-urban phase lived in villages, subsisting on agriculture, stock raising, hunting, and fishing. Probably the dissemination of metal technology in the rural areas promoted agriculture and settlements. Some places, such as Prabhas Patan (Somnath) and Rangpur, both in Gujarat, are the direct descendants of the Harappan culture. However, in Ahar near Udaipur, only a few Harappan elements are found. Gilund, which seems to have been a regional centre of Ahar culture, even has brick structures which may be placed between 2000 and 1500 BC. Otherwise, burnt bricks have not been found anywhere else except perhaps in the late Harappan phase at Bhagwanpura in Haryana. However, the dating of the Bhagwanpura layer to which the bricks relate is uncertain. Stray pieces occur at the OCP site of Lal Quila in Bulandshahr district in western UP. It should, however, be emphasized that few Harappan elements are to be found in the Chalcolithic culture of Malwa (c. 1700–1200 BC), which had its largest settlement at Navdatoli. The same is true of the numerous Jorwe sites found in the valleys of the Tapi, Godavari, and Bhima. The largest of the Jorwe settlements was Daimabad which had about 22 ha of habitation with a possible population of 4000 and may be considered proto-urban. However, a vast majority of the Jorwe settlements were villages.

Some post-urban Harappan settlements were discovered in the Swat valley in Pakistan. Here, the people practised a developed agriculture and cattle breeding together with pastoralism. They used black–grey burnished ware produced on a

slow wheel. This ware resembles the pottery from the northern Iranian plateau during the third millennium BC and later. The Swat valley people also produced black-on-red painted and wheel-turned pottery with a close linkage with the Indus pottery during the early post-urban period, that is, with the post-urban culture associated with Harappa. The Swat valley may, therefore, be regarded as the northernmost outpost of late Harappan culture.

Several late or post-urban Harappan sites have been excavated in the Indian territories of Punjab, Haryana, UP, and also in Jammu. Mention may be made of Manda in Jammu, Chandigarh and Sanghol in Punjab, Daulatpur and Mitthal in Haryana, and Alamgirpur and Hulas in western UP. It seems that the Harappans took to rice when they came to Daulatpur in Haryana and Hulas in Saharanpur district of UP. *Ragi*, or finger millet, is not so far known to have been grown at any Harappan site in north India. In Alamgirpur, the late Harappans probably produced cotton, as can be inferred from the cloth impression on Harappan pottery.

The painted Harappan pottery found in the late or post-urban Harappan sites in the northern and eastern areas is replaced with less intricate designs, although there are some new pot forms. Some late Harappan pot forms are found interlocked with Painted Grey Ware remains at Bhagwanpura, but by this time the Harappan culture seems to have reached a point of complete dilution.

In the post-urban Harappan phase, no object for measuring length has been found. In Gujarat, cubical stone weights and terracotta cakes were absent in the later period. Generally, all post-urban Harappan sites lack human figurines and the characteristic painted designs. Although faience went out of fashion in Gujarat, it was freely used in north India.

Percolation of New Peoples

During the late phase of Harappan culture some exotic tools and pottery indicate the slow percolation of new peoples into the Indus basin. Some signs of insecurity and violence are evident in the last phase of Mohenjodaro. Hoards of jewellery were buried at places, and skulls were huddled together at one place. New types of axes, daggers, knives with midribs, and flat tangs figure in the upper levels of Mohenjo-daro. They seem to betray some foreign intrusion. Traces of new peoples have been found in a cemetery related to the late phase of Harappa, where new kinds of pottery occur in the latest levels. New types of pottery also occur in some Harappan sites in Baluchistan. Baluchistan indicates

that the horse and Bactrian camel existed there in 1700 BC. The new peoples may have come from Iran and south Central Asia, but they did not come in such numbers as to completely overwhelm the Harappan sites in Punjab and Sindh. Although the Rig Vedic people largely settled in the land of the Seven Rivers in which the Harappan culture once flourished, we have no archaeological evidence of any mass-scale confrontation between the late Harappans and the Indo-Aryans. Successive groups of the Vedic people may have entered the subcontinent in the post-urban Harappan phase between 1500 and 1200 BC.

Problem of Origin

Several pre-Harappan agricultural settlements sprang up in the Hakra area in the Cholistan desert in Pakistan around 4000 BC. However, agricultural settlements first arose on the eastern fringe of Baluchistan around 7000 BC in the pre-ceramic Neolithic age on the border of the Indus plains. From that time onwards, people domesticated goats, sheep, and cattle. They also produced barley and wheat. These practices of earning subsistence expanded from the fifth millennium BC when granaries were set up. In the fifth and fourth millennia BC, mud bricks began to be used. Painted pottery and female terracotta figurines also began to be made. In the northern part of Baluchistan, a site called Rahman Dheri developed as the earliest town with planned roads and houses. This site was located virtually parallel to Harappa on the west. It is evident that the early Harappan and mature Harappan cultures developed from the Baluchistan settlements.

Sometimes the origin of Harappan culture is attributed principally to the natural environment. The current environment of the Harappan area is not favourable for crafts and cultivation, but in the third millennium BC arid and semi-desert conditions were not dominant there. In 3000–2000 BC we have evidence of both heavy rain and a substantial flow of water into the Indus and its tributary Sarasvati, virtually identical to the dried-up Hakra in Sindh. Sometimes the Indus culture is called the Sarasvati culture, but the flow of water in the Harappan Hakra was the contribution of the Yamuna and the Sutlej. These two rivers joined the Sarasvati for some centuries due to tectonic developments in the Himalayas. Therefore, the credit for helping the Harappan culture should really go to these two rivers together with the Indus and not to the Sarasvati alone. Moreover, the evidence for heavy rainfall in the Indus area cannot be ignored.

Was the Harappan Culture Vedic?

Sometimes Harappan culture is called Rig Vedic, but its principal features do not figure in the *Rig Veda*. Planned towns, crafts, commerce, and large structures built of burnt bricks mark the mature Harappan phase. The *Rig Veda* does not feature these. As will be shown later, the early Vedic people lived on cattle rearing supplemented by agriculture, and did not use bricks. The early Vedic people occupied virtually the entire Harappan zone, but also lived in Afghanistan.

The mature urban phase lasted from 2500 to 1900 BC, but the *Rig Veda* is placed around 1500 BC. Also, the Harappan and Vedic people were not aware of exactly the same plants and animals. The *Rig Veda* mentions only barley, but the Harappan knew about wheat, sesamum, and peas. The rhinoceros was known to the Harappans but unknown to the early Vedic people. The same is true of the tiger. The Vedic chiefs were horse-centred, which is why this animal is mentioned 215 times in the *Rig Veda*, but the horse was hardly known to the urban Harappans. The Harappan terracottas represent the elephant, but unlike the horse it is not important in the earliest Veda.

The Harappan writing, called the Indus script, has not been deciphered so far, but no Indo-Aryan inscriptions of Vedic times have been found in India. We have no clear idea about the languages of the Harappans, though the Indo-Aryan language spoken by the Vedic people continues in South Asia in a variety of forms.

Problem of Continuity

Some scholars speak about the continuity of the Harappan culture, others of its change from urbanization to de-urbanization. As urbanism was the basic feature of the Harappan culture, with its collapse we cannot think of cultural continuity. Similarly, the de-urbanization of the Harappan city is not a simple transformation but meant the disappearance of towns, script, and burnt bricks for about 1500 years. These elements did not disappear in north India after the end of the Kushan towns.

It is said that the Harappan culture continued in the Gangetic plains and elsewhere in north India after its end in 1900 BC. However, no important Harappan feature appears in the Painted Grey Ware culture attributed to the first half of the first millennium BC. The PGW culture does not evidence great

buildings, burnt bricks, bronze, urbanism, and writing, but it has its own characteristic pottery. Though one or two instances of burnt bricks of about 1500 BC are adduced, really fired bricks appear in north India around 300 BC in the phase of the Northern Black Polished Ware culture. Similarly, once the Harappan culture ended, writing came into currency during the NBPW phase in the form of the Brahmi script. It was, however, written from left to right whereas the Harappan script was written from right to left. Similarly, the NBP pottery cannot be related to Harappan pottery. The effective use of iron in the NBPW phase gave rise to a new socioeconomic structure in the mid-Gangetic plains in the fifth century BC. However, neither iron nor coinage, which marked the NBPW phase, was characteristic of the Indus culture. Though some stray beads of the Indus culture reached the Gangetic plains, they cannot be considered an important Indus trait. Similarly, a few Harappan ceramic items and terracottas continued after 2000 BC, but these objects alone cannot represent the entirety of the mature Harappan culture. However, stray elements of the Indus culture continued in the Chalcolithic cultures of Rajasthan, Malwa, Gujarat, and upper Deccan. It appears that after the end of the urban Harappan culture in 1900 BC, there was some give and take between the Indo-Aryan and the existing cultures. The Munda and proto-Dravidian languages attributed to the Harappans continued. Through the interaction, both the Aryan and pre-Aryan languages were enriched. We find pre-Aryan words for pottery and agriculture in Sanskrit, but the balance weighed in favour of the Indo-Aryans whose language spread in a major part of the subcontinent.

Chronology

(BC)	
7000	Earliest agricultural settlements in Baluchistan.
5th millennium	Existence of granaries, use of mud bricks.
4000	Pre-Harappan settlements in Cholistan (Pakistan).
3000–2000	Period of heavy rain and substantial flow of water into the Indus and Sarasvati.
2500–1900	Mature Harappan culture.
2000	Elam as a powerful state. The remains of a horse in Surkotada.
1900–1500	Degenerate phase of Harappan culture in Gujarat,

	Rajasthan, Haryana, and western UP.
1800	Use of rice in Lothal.
1900–1200	Post-urban Harappan culture.
1700	The Yamuna and Sutlej leave the Sarasvati. Existence of the horse and Bactrian camel in Baluchistan.
1500–1200	Successive groups of the Vedic people enter the Indian subcontinent.
300	Fired bricks used in north India. Writing in Brahmi script.

Chronology of Harappan Archaeology

(AD)	
1853	A. Cunningham's find of a Harappan seal.
1921	Daya Ram Sahani's excavation at Harappa.
1931	Marshall excavated Mohenjo-daro.
1938	Mackay excavated the same site.
1940	Vats excavated Harappa.
1946	Mortimer Wheeler excavated Harappa.
Post-1947 period	Harappan and associated sites excavated by Suraj Bhan, M.K. Dhavalikar, J.P. Joshi, B.B. Lal, S.R. Rao, B.K. Thapar, R.S. Bisht, and others.